



# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

Norman H. Bangerter

Governor

Dee C. Hansen

Executive Director

Dianne R. Nielson, Ph.D.

Division Director

355 West North Temple

3 Triad Center, Suite 350

Salt Lake City, Utah 84180-1203

801-538-5340

DOGM  
MINERALS PROGRAM  
FILE COPY

July 25, 1990

Mr. Gary E. Butts  
Vice President  
Sindor, Incorporated  
7936 East Arapahoe Court  
Suite 2900  
Englewood, Colorado 80112

Dear Mr. Butts:

Re: Permitting Issues, Lisbon Valley Copper Project, M/037/032, San Juan County, Utah

I am in receipt of your letter requesting clarification of the regulatory issues involved in permitting Sindor's Lisbon Valley Copper Project. In particular, the question of water ponding at the bottom of the Centennial Pit has raised some concerns.

The Division is concerned that water potentially remaining, in the pit, after cessation of mining, may contain levels of cadmium detrimental to the various species of wildlife which would utilize the site. The Division is also concerned that any mining activity does not increase the levels of cadmium already present in the groundwater.

As we indicated at our meeting on July 3, 1990, the Division will require backfilling of the pit to an elevation above the typical ground water level. This would eliminate the problem of, the formation of, a permanent lake at the bottom of the pit. Because the cadmium problem is believed to originate from natural background materials, groundwater content of cadmium would not doubt be higher than runoff reaching the pit. Groundwater would obviously be the main source of water feeding a pit lake below the groundwater level. Ponding from snow melt or rainwater would be acceptable, based on the information available to us at this time.

As you pointed out in your July 16, 1990 letter, some of the literature addressing cadmium problems, has indicated that the adverse effects of cadmium is alleviated by the  $\text{CaCO}_3$  content (hardness) of a water supply. As indicated by water quality analyses already performed at the site, the hardness content is quite high. If the literature does,

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in-fact, support the concept of neutralization of cadmium based on hardness content, then we will look very seriously at granting a complete variance for the pit (no backfilling). However, in order to reach such a conclusion it will be necessary to obtain a much better understanding of the site specific cadmium and  $\text{CaCO}_3$  levels in the groundwater.

You indicated, at the meeting, that the Utah Bureau of Water Pollution Control was uninterested in the cadmium problem at the Sindor site, as long as it could be substantiated that it was naturally occurring. As part of your further investigation into the cadmium issue, it will be necessary to address the question of origin as well.

We appreciate your request to clarify these issues and hope this information addresses your questions adequately. Please don't hesitate to call if you have further questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Holland Shepherd", written in a cursive style.

Holland Shepherd  
Reclamation Specialist

jb  
cc: Larry Mize, BWPC  
Lowell Braxton, DOGM  
Wayne Hedberg  
Tony Gallegos  
WMN.2/1-2